

In this issue of BJOG, Gravensteen and colleagues report that women with prior stillbirth had increased numbers of antenatal visits, induced labor and cesarean deliveries in subsequent pregnancies compared to those with prior livebirths (Gravensteen et al; BJOG 2017). However, only a small proportion of the additional care was associated with maternal anxiety or dread of childbirth.

Numerous epidemiologic studies note an increased risk of stillbirth in subsequent pregnancies in women with prior stillbirth. A recent meta-analysis noted a pooled odds ratio of 4.83 (95% CI 3.77-6.18) for subsequent stillbirth after prior stillbirth (Lamont et al BMJ 2015;350:h3080). In addition, women with prior stillbirth are at increased risk for other adverse pregnancy outcomes such as fetal growth restriction (FGR), preeclampsia and preterm birth in subsequent pregnancies. The risk varies based on the cause of the index stillbirth, but appears to be higher after stillbirth due to placental disorders (Monari et al PLOS One 2016). Accordingly, it is plausible that increased healthcare utilization (antenatal testing, antenatal visits, induction of labor) may improve outcomes in this population, but there is no evidence of such an association.

In addition to the medical issues, pregnancy after stillbirth is emotionally difficult for both families and providers. Indeed, Gravensteen and colleagues confirm the increased rate of anxiety for women in subsequent pregnancies (30 vs 2%). Although anxiety was a minor mediator for increased health care utilization, the instruments used may not have assessed anxiety or other psychological symptoms specific to prior stillbirth (Burden et al, BMC Pregnancy & Childbirth 2016;16:9. Virtually 100% of families with prior stillbirth probably experience some anxiety in subsequent pregnancies). This may not be identified in a questionnaire designed to assess general anxiety.

Provider's behavior also likely influences health care utilization. The desire to everything possible that might help, as well as fear of liability if another stillbirth occurs leads to increased testing, inductions and cesarean deliveries initiated by care givers (Robson et al Aust NZJ Obstet Gynecol 2006). As acknowledged by the authors, this factor was not assessed in their cohort.

Given the almost universal anxiety experienced by families and clinicians, it might seem reasonable to embrace additional obstetric interventions in pregnancies after stillbirth. At the least, interventions such as antenatal testing, frequent visits, inductions and cesareans have the (as yet unproven) potential to decrease stillbirths and they may provide emotional reassurance. However, they also have the potential to cause harm. This is especially true in cases of iatrogenic preterm birth, which can lead to serious morbidity from complications of prematurity. In cases of high risk for stillbirth, some risk of prematurity might be warranted after thorough discussion of risks and benefits with parents. In contrast, early delivery is probably not justified if the risk of stillbirth is quite low. Cesarean delivery also carries meaningful medical risks, especially in future pregnancies. Even seemingly innocuous tests such as antenatal testing and ultrasound have the potential to cause stress and harm from false positive results.

We congratulate Gravensteen and colleagues for highlighting the issues of maternal emotional wellbeing and its influence on obstetric management. We hope that this paper will prompt further research as to the optimal individualized

management of pregnancy after stillbirth with regard to both the medical and emotional wellbeing of families.